

Pending Claims

This listing of claims is a courtesy copy of the pending claims. No amendments have been made in this Reply.

1. (previously presented) An orthogonal frequency division multiplexing (OFDM) communication device, comprising:

a time multiplexor;

a synchronization signal generator operatively connected to the time multiplexor; and

a data supplier operatively connected to the time multiplexor, wherein a zero amplitude reduced preamble signal, which is obtained by passing a specified synchronization preamble through an ideal low-pass filter in the synchronization signal generator to reduce a signal component to near zero amplitude within a time domain, is time-multiplexed in the time multiplexor with transmit data received from the data supplier to generate an OFDM transmit signal.

2. (previously presented) The OFDM communication device according to claim 1, wherein said ideal low-pass filter comprises an FFT section for subjecting an input signal to a fast Fourier transform (FFT) and a zero substitution section for providing zero substitution for FFT section output components having a frequency higher than specified.

3. (previously presented) The OFDM communication device according to claim 2, wherein said ideal low-pass filter comprises a table that stores values obtained when input signals pass through said ideal low-pass filter in accordance with values of the input signals.

4. (previously presented) The OFDM communication device according to claim 1, wherein said ideal low-pass filter comprises a table that stores values obtained

when input signals pass through said ideal low-pass filter in accordance with values of the input signals.

5. – 6. (canceled)

7. (previously presented) An orthogonal frequency division multiplexing (OFDM) communication device for synchronizing a transmitter and a receiver with a synchronization preamble, comprising:

a transmitter for obtaining a zero amplitude reduced preamble signal by passing a first specified synchronization preamble through an ideal low-pass filter to reduce a signal component to near zero amplitude within a time domain, and generating an OFDM transmit signal by time-multiplexing the obtained zero amplitude reduced preamble signal with transmit data; and

a receiver having a synchronization timing calculator for determining a cross correlation between a received signal and a second specified synchronization preamble, which is patterned the same as the first specified synchronization preamble, and calculating a synchronization position, which is shifted from a peak value position by a specified amount of time, in accordance with the determined cross correlation.

8. (original) The OFDM communication device according to claim 7, wherein said ideal low-pass filter comprises an FFT section for subjecting an input signal to fast fourier transform (FFT) and a zero substitution section for providing zero substitution for FFT section output components having a frequency higher than specified.

9. (previously presented) The OFDM communication device according to claim 7, wherein said ideal low-pass filter comprises a table that stores values obtained when input signals pass through said ideal low-pass filter in accordance with the values of the input signals.

10. (original) The OFDM communication device according to claim 7, wherein the synchronization position is shifted from a peak position of said cross correlation within said receiver by a specified amount of time.